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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,893	01/29/2004	Louis J. Spadaccini	67097-015	5280
26096	7590	09/28/2005	EXAMINER	
CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009			CASAREGOLA, LOUIS J	
			ART UNIT	PAPER NUMBER
			3746	

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/767,893

Applicant(s)

SPADACCINI ET AL.

Examiner

Louis J. Casaregola

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 19-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 12-16 is/are rejected.
- 7) ☒ Claim(s) 6-11, 17-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

***Restriction Requirement***

Restriction to one of the following inventions is required under 35 USC 121:

- I. Claims 1-18 drawn to an aircraft or gas turbine fuel system classified in Class 60, subclass 734, and
- II. Claims 19-22, drawn to a method of operating a fuel system classified in Class 60, subclass 776.

The inventions of Groups I and II above are distinct because the method of Group II could be practiced with apparatus materially different than that of Group I. The Group II method, for example, has general utility and could be applied to equipment, other than aircraft or gas turbines (boilers, furnaces, fuel transport systems, etc.) that requires pumping of fuel.

Because these inventions are distinct for the reasons given above and require separate classification and/or divergent fields of search, restriction for examination purposes as indicated is proper.

On 9/22/05, applicants attorney, Mr. John Siragusa, made a telephone election of the invention of Group I, claims 1-18. An action on the merits of These claims is set forth below, and non-elected claims 19-22 are withdrawn from further consideration.

***Claim Rejections - 35 USC 102***

Claims 1-4, 12 and 13 are rejected under 35 USC 102(b) as being anticipated by either Angell or Taylor et al.

Applicants' broadly claimed fuel system reads on prior art fuel systems of the type disclosed by Angell and Taylor. Angell's fuel pump 42 corresponds to the claimed main fuel pump and his upstream boost pump 44 includes features corresponding to the claimed de-aerator since pump 44 is specifically designed to free all gases and vapors from the fuel (see col. 3, lines 48-50). Taylor's system similarly includes pump 4 corresponding to the claimed main fuel pump, vapor separator 13 corresponding to the claimed de-aerator, and upstream pump 1, which constitutes a boost pump (see Figs. 3 and 4). It is additionally noted that claim language describing the main fuel pump as being "for pumping fuel to a fuel metering device" (claim 1, line 2) is an intended use clause. This language does not constitute a positive inclusion of the metering device as part of the claim. The prior art systems, moreover, are both intended for aircraft engines and are thus capable of pumping fuel to engine fuel controls that would normally serve as fuel metering devices.

Claims 2, 4, 12 and 13 include various passages directed to a reduction in net positive suction pressure, a relation between fuel flow rate and positive suction pressure, etc. This language merely describes desired results, and if applicants' broadly

claimed structure is presumed capable of achieving such results, then the structurally equivalent prior art must be presumed equally capable.

Claim 5 is rejected under 35 USC 102(b) as being anticipated by Taylor et al.

Note that in Taylor's system, vapor separator (de-aerator) 13 is located between upstream pump (boost pump) 1 and main pump 4.

### ***Claim Rejections - 35 USC 103***

Claims 14 and 15 are rejected under 35 USC 103(a) as being unpatentable over Angell or Taylor et al as discussed above, and further in view of Hill et al (propulsion textbook).

Claims 14 and 15 combine the limitations of claims 1 and 3 with gas turbine engine elements including a compressor, a combustor and a turbine. It is emphasized that the Angell and Taylor fuel systems are specifically intended for aircraft engines, which are typically gas turbine engines including compressors, combustors, and turbines as shown, for example, by the cited portion of Hill. It would have thus been obvious to use the fuel system in either of the primary references in conjunction with an engine comprising a compressor, combustor and a turbine.

Claim 16 is are rejected under 35 USC 103(a) as being unpatentable over Taylor et al in view Hill et al for the same reasons as discussed in the rejection of claims 14 and 15 above.

### ***Allowable Subject Matter***

Claims 6-11, 17 and 18 contain allowable subject matter but are objected as depending from rejected parent claims. If rewritten in independent form, these claims will be allowed.


### ***Additional References***

Taivalkoski et al is cited to provide useful background information on mechanical vapor separators that operate on a centrifugal or vortex flow principle (see element 44). Note that such devices are capable of separating dissolved gases to produce de-aerated fuel as described, for example, in column 4, lines 65-67.

Huang et al is cited as disclosing an example of a fuel pump system including a deoxygenator upstream of a fuel pump (see elements 16 and 20). Note that a deoxygenator is not construed as a de-aerator since it is capable of removing only one type gas, i.e. oxygen.

Art Unit: 3746

L. J. Casaregola  
571-272-4826 (M-F; 7:30-4:00)  
571-273-8300 FAX  
September 26, 2005

  
LOUIS J. CASAREGOLA  
PRIMARY EXAMINER

If repeated attempts to reach the examiner by telephone are unsuccessful, the art unit supervisor, Timothy Thorpe, can be reached at 571-272-4444.

Information regarding the status of this application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR, and status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).